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APR 23 1992

Federal Communications Commission
Office of the Secretary

April 23, 1992

Ms. Donna R. Searcy, Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: Pioneer's Preference Request of
Constellation Communications, Inc.
ET Docket No. 92-28; PP-29

Dear Ms. Searcy:

Enclosed on behalf of AMSC Subsidiary Corporation ("AMSC") is an original and five copies of its "Consolidated Reply Comments on Requests for Pioneer's Preference" regarding the above-referenced pioneer's preference request filed by Constellation Communications, Inc. ("Constellation"). AMSC is consolidating its reply comments on the Constellation request with its reply comments on four other requests (Ellipsat Corporation, PP-30; Loral Qualcomm Satellite Services, Inc., PP-31; Motorola Satellite Communications, Inc., PP-32 and TRW Inc., PP-33) that raise similar issues and have the same filing deadlines. To insure that AMSC's pleading is associated with each of the pioneer's preference files, under separate cover we also are submitting this same pleading in the other four files.

Please contact the undersigned if there are any questions.

Sincerely,

Gregory L. Masters

GLM:vm
Enclosure

No. of Copies rec'd 0+9
List A B C D E

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

In the Matter of	)	ET Docket No. 92-28
	)	
Amendment of Section 2.106 of	)	PP-29
the Commission's Rules to	)	PP-30
Allocate Spectrum to the	)	PP-31
Mobile Satellite Service Above	)	PP-32
1 GHz for Low-Earth Orbit	)	PP-33
Satellites -- Requests for	)	
Pioneer's Preference by	)	
Constellation, Ellipsat,	)	
Loral, Motorola, and TRW	)	

CONSOLIDATED REPLY COMMENTS ON
REQUESTS FOR PIONEER'S PREFERENCE

AMSC Subsidiary Corporation ("AMSC"), by its attorneys, hereby submits these reply comments on the requests for pioneer's preference submitted by Constellation Communications, Inc. ("Constellation"), Ellipsat Corporation ("Ellipsat"), Loral Qualcomm Satellite Services, Inc. ("Loral"), Motorola Satellite Communications, Inc. ("MSCI"), and TRW Inc. ("TRW").[1/] As set forth below, the comments on these requests make clear that none of the proponents has met the standard for receiving a pioneer's preference. As one of the proponents now concedes, this is a

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1/ See Request for Pioneer's Preference of Constellation, PP-29 (February 20, 1992); Request for Pioneer's Preference of Ellipsat, PP-30 (July 29, 1991); Request for Pioneer's Preference of Loral, PP-31 (November 4, 1991); Request for Pioneer's Preference of MSCI, PP-32 (July 30, 1991); Request for Pioneer's Preference of TRW, PP-33 (September 6, 1991).

These Consolidated Reply Comments are filed pursuant to the Commission's Public Notice, Mimeo No. 22153 (March 9, 1992).

case where the public interest would be served best by not granting any of the requests.

Background

AMSC demonstrated in its Consolidated Opposition to Request for Pioneer's Preference that none of the non-geostationary system proposals for the RDSS bands is deserving of a pioneer's preference. Specifically, the systems lack sufficient merit to warrant either a spectrum allocation or a license, because each would cause and receive substantial interference with respect to existing users of the RDSS bands and would have little actual capacity,[2/] and several would have serious reliability

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2/ Four of the non-geostationary system applicants -- Constellation, Ellipsat, Loral and TRW -- propose to operate their systems simultaneously in the RDSS bands. AMSC has demonstrated, however, that not even two of the proposed systems could viably co-exist even if the numerous sharing concerns with existing users of the bands were ignored. See Consolidated Opposition of AMSC to Petitions to Deny, File Nos. 15/16-DSS-MP-91 (January 31, 1992), Technical Appendix, at 6-21. Additionally, MSCI has challenged the ability of these four systems to share the RDSS bands. See Reply Comments of MSCI, File Nos. 15/16-DSS-MP-91, 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (January 31, 1992), Technical Appendix 1.

MSCI, on the other hand, has proposed to utilize all of the upper 10 MHz of the RDSS uplink band for its proposed system, leaving the lower 6.5 MHz of the band for one or more of the other proposed systems. AMSC has shown that this is a similarly unworkable sharing approach. See Consolidated Reply of AMSC, File Nos. 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (March 27, 1992), Technical Appendix, at 30-34. The other non-geostationary system applicants agree. See Reply Comments of Constellation, File Nos. 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (March 27, 1992), at 8-9; Response of Ellipsat, File Nos. 15/16-DSS-MP-

(continued...)

problems. In addition, none of the proponents has shown its system's technical feasibility. Because none of the proposed systems can be licensed viably to operate in the limited RDSS spectrum that will be available, AMSC has urged the Commission to allocate the RDSS uplink band to MSS and allow AMSC to integrate these frequencies into the U.S. MSS system.

AMSC further demonstrated that none of the non-geostationary system proposals is sufficiently innovative to warrant a pioneer's preference. Each of the applicants proposes merely to provide services in the RDSS bands that will be provided by the U.S. MSS system. Thus, the applicants propose to provide no new service; rather, they propose only to provide MSS service in new frequency bands, and to do so in a less spectrum-efficient manner. Furthermore, the concepts of mobile voice and data service via satellite, non-geostationary orbits, and service to hand-held units are not new. Indeed, only a few of the applicants spoke in more than the most general terms about the specifically "innovative" elements of their systems. To the extent that the applicants set forth particular aspects of their systems that they alleged to be "innovative," AMSC demonstrated that nearly all of these technologies have been used or proposed by others.

2/(...continued)
91, 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (March 27, 1992), at 5-6; Consolidated Reply Comments of Loral, File Nos. 15/16-DSS-MP-91, 19-DSS-P-91(48), CSS-91-014 (March 27, 1992), at 10-12 & Technical Appendix at 11-13; Consolidated Response of TRW, File Nos. 15/16-DSS-MP-91, 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (March 27, 1992), at 12-14.

AMSC also noted that all five of the non-geostationary applicants seek nationwide pioneer's preferences -- a type of preference that the Commission will rarely grant. Where as here none of the applicants has shown an innovation deserving of a pioneer's preference, let alone a nationwide (indeed, a worldwide) preference, this is a case where the public interest would be served best by granting none of the requests.

Discussion

I. The Comments Filed on the Pioneer's Preference Requests Support AMSC's Position That None of the Requests Should Be Granted

The comments filed on April 8, 1992 by the non-geostationary system applicants fully support AMSC's position that none of their pioneer's preference requests should be granted. Indeed, at least one of the applicants, TRW, now states that "the instant proceeding is precisely the type where grant of any of the requests would be contrary to the public interest."[3/] Constellation filed an opposition to MSCI's request in which it appears also to suggest that none of the requests should be granted.[4/]

Constellation, Ellipsat, Loral and TRW filed oppositions to MSCI's pioneer's preference request. These applicants agree that virtually all the aspects of MSCI's system which MSCI claimed

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3/ Comments of TRW on Constellation, Ellipsat, Loral Requests (April 8, 1992), at 4.

4/ Constellation Opposition to Pioneer's Preference Request of MSCI (April 8, 1992) ("Constellation Opposition"), at 6.

were "innovative" have been developed, and in many cases have been used, by others.[5/] A number of these applicants also note that MSCI has failed to prove that its proposed system is technically feasible,[6/] and that serious questions remain as to that system's technical viability.[7/]

MSCI opposes the pioneer's preference requests of Constellation, Ellipsat, Loral and TRW. MSCI notes that these applicants have not pioneered any of the services or technologies that they claim to be "innovative," including their proposed use of code division multiple access ("CDMA") modulation.[8/] Furthermore, MSCI questions the technical merits of numerous aspects of these proposed systems.[9/]

Too many substantial issues surround the proposed non-geostationary systems to warrant granting a pioneer's preference to any of them. Unlike the only case to date in which the Commission has granted a pioneer's preference, serious questions

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5/ Constellation Opposition at 8; Opposition of Ellipsat to Pioneer's Preference Request of MSCI (April 8, 1992) ("Ellipsat Opposition"), at 11-14; Opposition of Loral to MSCI's Request for Pioneer's Preference (April 8, 1992) ("Loral Opposition"), at 4-5; Opposition of TRW to Pioneer's Preference Request of MSCI (April 8, 1992) ("TRW Opposition"), at 11-13.

6/ Constellation Opposition at 8-9; Loral Opposition at 5; TRW Opposition at 13-16.

7/ Constellation Opposition at 7-9; Ellipsat Opposition at 12, 15; Loral Opposition at 4; TRW Opposition at 15-16.

8/ Comments of MSCI (April 8, 1992), at 17-25.

9/ Comments of MSCI at 19-20 (questioning ability of CDMA systems to share the RDSS band), 22-23 (noting problems with Loral's "shaped" beam antenna and other questionable aspects of Loral's system), 24 (noting that many features of Constellation's system appear to be in early design stage).

exist as to whether these systems can share the RDSS spectrum with each other or with existing users of the bands.[10/] A grant of any of the pioneer's preference requests would preempt the resolution of the numerous issues regarding the system applications and the use of the RDSS bands.[11/] Thus, not only are the non-geostationary system applicants undeserving of a pioneer's preference, but the grant of such a preference would be particularly inappropriate in this case.

II. The Additional Claims Made By the Applicants in Support of Their Pioneer's Preference Requests Are Unpersuasive

Though each of the non-geostationary system applicants was required to make the showing necessary to justify the grant of a pioneer's preference in its original request, a number of the applicants make additional claims in their comments which attempt to provide additional support for their requests. As these claims were not advanced in the applicants' initial pioneer's preference requests, they should not be considered. In any event, these further claims are unpersuasive.[12/]

10/ In addition to the numerous existing and proposed users of the RDSS bands that AMSC has discussed in prior pleadings, Canada has recently submitted an advance publication to the International Frequency Registration Board for a geostationary satellite system in the RDSS bands.

11/ The Commission has recognized that "the issues in the licensing and rule making proceedings to a significant degree are analogous to the issues raised by their associated pioneer's preference requests." Order Denying an Extension of Time for Comments and Replies, DA 92-326 (March 27, 1992).

12/ AMSC reserves the right to comment further on these additional assertions at a later date.

Ellipsat has previously admitted that its "innovative" system design "uses existing state-of-the-art technology."[13/] It now asserts in its comments that "particularly innovative is the way in which the system is designed to expand gracefully as the market for mobile services develops."[14/] This, however, appears not to entail any technological innovation, but merely represents Ellipsat's choice to initially launch a small system with poor capacity and coverage.[15/] Moreover, Ellipsat states that "[n]o one has previously proposed an elliptical orbit in the configuration designed by Ellipsat;"[16/] however, Ellipsat nowhere explains how its proposed configuration offers any particular advantages over any other.

In comments supporting its pioneer's preference request, Loral appears now to rest its case for "innovativeness" on its proposed use of CDMA technology that was developed by one of its shareholders, Qualcomm, Inc., for use in terrestrial cellular systems.[17/] However, as AMSC has demonstrated previously, CDMA is a technique that has been in use for some time, and Loral has

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13/ Ellipsat Request for Pioneer's Preference, PP-30 (July 29, 1991), at 2.

14/ Ellipsat Opposition at 17.

15/ See Petition to Deny of AMSC, File Nos. 17-DSS-P-91(48), CSS-91-013, 18-DSS-P-91(18), 19-DSS-P-91(48), CSS-91-014, 20-DSS-P-91(12), CSS-91-015 (December 18, 1991), Technical Appendix, at 8, 39; see also Response of AMSC, File Nos. 11-DSS-P-91(6), 9-DSS-P-91(87), CSS-91-010 (August 5, 1991), at 5.

16/ Ellipsat Opposition at 17.

17/ Comments of Loral in Support of Request for Pioneer's Preference (April 8, 1992), at 9-12.

pointed out no specifically innovative CDMA features that it or Qualcomm has developed for use in Loral's proposed system.[18/]

AMSC and others have demonstrated that aspects of MSCI's proposed system such as intersatellite links, multiple spot beam technology, frequency reuse, and on-board signal processing all have been developed by others. In its comments on the pioneer's preference requests, MSCI recites the history of its announcement to the public of its system proposal, but provides nothing to refute the fact that it developed virtually none of these technologies.

MSCI purports to provide "preliminary results" of propagation experiments it has conducted, states that it has demonstrated "by a combination of analysis and simulation" that its system will be reliable under adverse environmental conditions, and asserts that it "has conducted voice and data

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18/ See Consolidated Opposition of AMSC (April 8, 1992), Technical Statement, at 3.

In addition, it is questionable whether Loral can claim credit for a pioneer's preference in this proceeding for the work of Qualcomm in developing CDMA for terrestrial systems. The Commission denied the pioneer's preference request of Starsys Inc., which had relied on the work of its corporate affiliate, North American CLS, Inc., in developing the Argos satellite system, a government LEO position determination system. See Request for Pioneer's Preference in Proceeding to Allocate Spectrum for Fixed and Mobile Satellite Services for Low-Earth Orbit Satellites, FCC 92-21 (February 11, 1992), at paras. 10-11 ("VITA"). The Commission found that the development of the Argos system "does not demonstrate an innovative contribution toward advancing a commercial LEO communications system." Id., para. 18. Moreover, like Loral, Starsys cited as an innovation its proposed use of CDMA, but the Commission found that "[w]e are unable to discern any unique or innovative contribution by STARSYS with respect to the spread spectrum technology it proposes to use." Id.

simulations of key components of its system design."[19] MSCI also cites independent critical reviews of its system by teams of engineers and investors.[20]

However, MSCI has not supplied to the parties to this proceeding any results of these tests, aside from its brief narrative description of the results of its propagation experiments. MSCI has instead chosen to submit test results under protective cover to the Commission alone.[21] Thus, no interested party is able to confirm the results of the tests MSCI claims to have conducted.[22] In any event, the tests that MSCI claims to have conducted do not appear to have addressed the effect of MSCI's proposed system on existing users of the RDSS bands. In particular, AMSC and others have shown that serious interference and capacity concerns exist concerning MSCI's proposed bidirectional operation in the RDSS uplink bands.[23]

19/ Comments of MSCI (April 8, 1992), at 25-26.

20/ Id. at 26-27.

21/ See Attachment E to MSCI's Supplement to Request for Pioneer's Preference (April 10, 1992).

22/ See Opposition of Ellipsat to Request for Confidential Treatment (April 21, 1992).

23/ On April 10, 1992, MSCI filed a supplement to its pioneer's preference request, together with a bound volume of attachments. The attachments to MSCI's supplement that have been provided to the parties consist mainly of newspaper articles on MSCI's system and other documents most of which apparently were available to MSCI as early as 1990. Thus, MSCI's supplement and attachments represent a late attempt to support its pioneer's preference, and should not be considered. In any event, none of the attachments publicly submitted by MSCI establishes either that MSCI developed any of the technologies in its system, or that the system is technically feasible. AMSC reserves the right, if

(continued...)

Indeed, none of the non-geostationary system applicants has shown, through experimentation or otherwise, that its system can viably co-exist with existing users of the RDSS bands.

Conclusion

As AMSC has demonstrated, and as the comments of others in this proceeding make clear, none of the non-geostationary system proponents has met the stringent test for obtaining the nationwide pioneer's preference it seeks. Moreover, the grant of any pioneer's preference would be particularly inappropriate in this case, as such a grant would prejudge both the licensing and rulemaking aspects of the RDSS-band proceeding. This, therefore, is a case where none of the preference requests should be granted. Accordingly, AMSC urges the Commission to deny each of the above-referenced requests.

Respectfully submitted,

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Dated: April 23, 1992

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23/(...continued)
necessary, to submit further comments addressing MSCI's late-filed supplement.

CERTIFICATE OF SERVICE

I, Valerie A. Mack, a secretary of the law firm of Fisher, Wayland, Cooper and Leader, do hereby certify that true copies of the foregoing "Consolidated Reply Comments on Requests for Pioneer's Preference" were sent this 23rd day of April 1992, by first class United States mail, postage prepaid, to the following:

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